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PATENT #

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	John O. Moody et al.
Serial No.	:	09/740,418
Filing Date	:	December 19, 2000
For	:	APPARATUS AND METHOD FOR CONTROLLING ALLOCATION OF RESOURCES AND TASK EXECUTION
Group Art Unit	:	2127
Examiner	:	Anh T. Nguyen
Attorney Docket No.	:	LM(F)4878

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

1. Pursuant to 37 CFR §1.97 and §1.98, and in compliance with CFR §1.56, the Office's attention is directed to the patents, pending applications, publications and other information listed on the attached PTO-1449. Copies of listed foreign patents and other listed publications are enclosed. No copies of the listed U.S. patents and U.S. patent applications are enclosed. Applicant(s) make no admission that the enclosed documents are prior art to the present invention.

2. Regarding each listed document that is not in the English language, an English-language translation accompanies this Statement as indicated on the attached PTO-1449 or a corresponding U.S. Patent is enclosed or a concise explanation of the relevance of the document is set forth on an attached sheet, or a copy of an English-language search report is attached.

3. Pursuant to 37 CFR §1.97(b) this Statement is being filed (one must be checked):

(a) ☐ Within 3 months of the filing date or date of entry into the National Stage.

(b) ☐ Before the mailing date of a first Office Action on the merits.

(c) ☒ After the period set forth in 37 CFR §1.97(b) but before the mailing date of either a final action or a notice of allowance, or an action that otherwise closes prosecution in the application.

1) ☐ A certification is given below,

2) ☒ Enclosed is a check covering the fee ($180.00) set forth in §1.17(p) for consideration of this Statement, or

3) ☐ Charge the fee set forth in 37 CFR §1.17(p) to Deposit Account No. 20-0090.

(d) ☐ After the mailing date of either a final action or a notice of allowance, but before payment of the issue fee. The required certification and fee is indicated below.

1) ☐ Enclosed is a check covering the fee set forth in 37 CFR §1.17(p) $180, or

2) ☐ Charge the fee set forth in 37 CFR §1.17(p) to Deposit Account No. 20-0090.

4. Certification (if applicable):

(a) ☐ The undersigned hereby certifies that each item of information contained in this Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than 3 months prior to the filing of this Statement.

(b) ☐ The undersigned hereby certifies that no item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the undersigned's knowledge after making reasonable inquiry no item of information contained in the Statement was known to any individual designated in 37 CFR §1.56(c) more than 3 months prior to the filing of this Statement.

5. The Commissioner is hereby authorized to charge any additional fees, fees underpaid, or credit any overpayment with regard to this Statement to Deposit Account No. 20-0090.

6. Concise Explanation (if needed):

(1) ☐ Below is a Concise Statement of Relevance of enclosed non-English language document(s).

DOCUMENTS

[1] D. P. Bertsekas, "The Auction Algorithm: A Distributed Relaxation Method for the Assignment Problem", *Annals of Operations Research* 14 (1988) 105-123

[2] D. Chen, R. Szczerba, and J. Urhan Jr. "A Framed-Quadtree Approach for Determining Euclidean Shortest Paths in a 2-D Environment," *IEEE Transactions on Robotics and Automation*, vol. 13, no. 5, pp. 668-681, October 1997.

[3] O. E. Drummond, D. A. Castanon, M. S. Bellovin, "Comparison of 2-D Assignment Algorithms for Sparse, Rectangular, Floating Point, Cost Matrices, *Journal of the SDI Panels on Tracking*, Institute for Defense Analyses, Alexandria, VA, 15 Dec. 1990

[4] L. Holloway, B. Krogh, and A. Giua, "A Survey of Petri Net Methods for Controlled Discrete Event Systems", Discrete Event Dynamic Systems: Theory and Applications, vol. 7, no. 2, pp. 151-190, April, 1997.

[5] M. Iordache, John O. Moody, "Synthesis of Deadlock Prevention Supervisors Using Petri Nets", IEEE Transactions on Robotics And Automation, Vol. 18, No. 1, February 2002

[6] H. W. Kuhn, "The Hungarian Method for the Assignment Problem", *Naval Research Logistics Quarterly* 2 (1955) 83-97

[7] J. Moody and P. Antsaklis, "Petri Net Supervisors for DES with Uncontrollable And Unobservable Transitions", IEEE Transactions on Automatic Control, Vol. 45, No. 3, March 2000

[8] T. Murata, "Petri Nets: Properties, Analysis, and Applications", *Proceedings of the IEEE*, vol. 77, no. 4, pp. 541-580, 1989

[9] A. B. Poore, N. Rijavec, M. Liggins, V. C. Vannicola, "Data Association Problems Posed as Multidimensional Assignment Problems: Problem Formulation", SPIE Proceedings, Vol 1954 (1993) 552-563

[10] A. B. Poore, N. Rijavec, T. N. Barker, M. Munger, "Data Association Problems Posed as Multidimensional Assignment Problems: Numerical Simulations", SPIE Proceedings, Vol 1954 (1993) 564-573

[11] P. Ramadge and W. Wonham, "The Control of Discrete Event Systems", *Proceedings of the IEEE*, vol. 77, no. 1, pp. 81-97, 1989.

[12] H. Samet. "An Overview of Quadtrees, Octrees, and Related Hierarchical Data Structures," *NATO ASI Series*, F40:51-68, 1988.

Respectfully submitted,

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FORM PTO-1449 (REV. 6-89) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

ATTY DOCKET NO.: LM(F)4878	SERIAL NO. 09/740,418
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FILING DATE: December 19, 2000	GROUP: 2127

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES	TRANSLATION NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

		D. P. Bertsekas, "The Auction Algorithm: A Distributed Relaxation Method for the Assignment Problem", *Annals of Operations Research* 14 (1988) 105-123
		D. Chen, R. Szczerba, and J. Urhan Jr. "A Framed-Quadtree Approach for Determining Euclidean Shortest Paths in a 2-D Environment," *IEEE Transactions on Robotics and Automation*, vol. 13, no. 5, pp. 668-681, October 1997.
		O. E. Drummond, D. A. Castanon, M. S. Bellovin, "Comparison of 2-D Assignment Algorithms for Sparse, Rectangular, Floating Point, Cost Matrices, *Journal of the SDI Panels on Tracking*, Institute for Defense Analyses, Alexandria, VA, 15 December 1990
		L. Holloway, B. Krogh, and A. Giua, "A Survey of Petri Net Methods for Controlled Discrete Event Systems", Discrete Event Dynamic Systems: Theory and Applications, vol. 7, no. 2, pp. 151-190, April, 1997.
		M. Iordache, John O. Moody, "Synthesis of Deadlock Prevention Supervisors Using Petri Nets", IEEE Transactions on Robotics And Automation, Vol. 18, No. 1, February 2002

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP §609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent applicants' attorney.

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		T. Murata, "Petri Nets: Properties, Analysis, and Applications", *Proceedings of the IEEE*, vol. 77, no. 4, pp. 541-580, 1989
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